

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

<b>In Re Application of</b>	)	
	)	
<b>Nanda et al.</b>	)	<b>For: NETWORK TOPOLOGY</b>
	)	<b>FORMATION</b>
	)	
<b>Serial No. 10/699,007</b>	)	
	)	
<b>Filed: October 30, 2003</b>	)	<b>Group No. 2618</b>

**AMENDMENT UNDER 37 C.F.R. 1.114**

Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Commissioner:

This is an amendment made pursuant to Request for Continued Examination, responsive to a Final Office Action dated November 22, 2006, the time for responding having been extended until April 22, 2007. Please amend the above-identified application as follows:

**Amendments to the Claims** begin on page **2** of this paper.

**Remarks** begin on page **9** of this paper.

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**CERTIFICATE OF MAILING/TRANSMISSION**

I hereby certify that this correspondence is being transmitted via EFS to the US Patent and Trademark Office on this date, April 12, 2007

By:  (Leeanne Lawlor)

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By: \_\_\_\_\_ (Leeanne Lawlor)

## IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A module, comprising:  
a receiver configured to listen for a period of time for a first incoming pilot signal from a first remote terminal that exceeds a threshold power level; and  
a processor configured to operate under control of the first remote terminal if the receiver detects such first incoming pilot signal within the time period, and operate independently of the first remote terminal if in the case of the first incoming pilot signal exceeding said threshold level is not detected by the receiver within the time period, such independent operation including enabling a pilot signal transmission, whereby the transmission of a pilot signal enables communications with at least one other terminal.
2. (Original) The module of claim 1 wherein the processor is further configured to establish a communications link with a second remote terminal that acquires the transmitted pilot signal.
3. (Original) The module of claim 1 wherein the processor is further configured to register each of a plurality of second remote terminals that acquire the transmitted pilot signal.
4. (Original) The module of claim 3 wherein the processor is further configured to manage the number of terminal registrations.
5. (Original) The module of claim 4 wherein the processor is further configured to manage the number of terminal registrations by adjusting the power level of the pilot signal transmission.
6. (Original) The module of claim 3 wherein the processor is further configured to receive feedback from each of the registered terminals and designate one or more of the registered terminals to support communications with unregistered terminals based on the feedback.

7. (Original) The module of claim 6 wherein the feedback provided by each of the registered terminals is an indicator of the transmitted pilot signal strength measured at its respective registered terminals.

8. (Original) The module of claim 1 wherein the processor is further configured to receive a request to communicate from an unregistered terminal and assign one of the registered terminals to communicate with the unregistered terminal.

9. (Previously Presented) The module of claim 1 wherein the processor is further configured to set the threshold power level as a function of a minimum data rate that can be supported with the first remote terminal.

10. (Previously Presented) The module of claim 1 wherein the processor is further configured to register with the first remote terminal if the receiver detects such first incoming pilot signal within the time period.

11. (Original) The module of claim 10 wherein the receiver is further configured to listen for a second incoming pilot signal from a second remote terminal not registered with the remote terminal, and wherein the processor is further configured to establish a communications link with the second remote terminal if the receiver detects the second incoming pilot signal.

12. (Original) The module of claim 11 wherein the processor is further configured to schedule the receiver to listen for the second incoming pilot signal under control of the remote terminal.

13. (Original) The module of claim 10 wherein the processor is further configured to establish a communications link with a second remote terminal not registered with the remote terminal under direction of the remote terminal.

14. (Original) The module of claim 1 wherein the period of time the receiver listens for such incoming pilot signal is a function of the capabilities of the module.

15. (Currently Amended) A method of communications, comprising:

listening for a period of time for an incoming pilot signal from a first remote terminal that exceeds a threshold power level for the purpose of acquiring such incoming pilot signal and operating under control of the first remote terminal;

determining ~~that~~ a condition of non-acquisition of such incoming pilot signal ~~has not been~~ acquired within the time period; and

operating independently of the first remote terminal after determining ~~that~~ the condition of non-acquisition of such incoming pilot signal ~~has not been acquired~~ within the time period, such independent operation including transmitting a pilot signal, whereby the transmission of a pilot signal enables communications with at least one other terminal.

16. (Original) The method of claim 15 further comprising establishing a communications link with a second remote terminal.

17. (Original) The method of claim 15 further comprising registering each of a plurality of second terminals.

18. (Original) The method of claim 17 further comprising managing the number of terminal registrations.

19. (Original) The method of claim 18 wherein the management of the number of terminal registrations comprises adjusting the power level of the transmitted pilot signal.

20. (Original) The method of claim 17 further comprising receiving feedback from each of the registered terminals and designating one or more of the registered terminals as edge terminals to support communications with unregistered terminals based on the feedback.

21. (Original) The method of claim 20 wherein the feedback provided by each of the registered second terminals is an indicator of the pilot signal strength measured at its respective registered terminal.

22. (Original) The method of claim 15 further comprising receiving a request to communicate from an unregistered terminal and assigning one of the registered terminals to communicate with the unregistered terminal.

23. (Currently Amended) A module, comprising:

means for listening for a period of time for an incoming pilot signal from a first remote terminal that exceeds a threshold power level;

means for operating under control of the first remote terminal ~~if~~ in the case of detection of such incoming pilot signal ~~is detected~~ within the time period; and

means for operating independently of the first remote terminal ~~if~~ whereby in the case of non-detection of such incoming pilot signal ~~is not detected~~ within the time period, such independent operation including enabling a pilot signal transmission to enable communications with at least one other terminal.

24. (Original) The module of claim 23 further comprising means for registering a plurality of second remote terminals that acquire the transmitted pilot signal.

25. (Original) The module of claim 24 further comprising means for managing the number of terminal registrations by adjusting the power level of the pilot signal transmission.

26. (Original) The module of claim 23 further comprising means for setting the threshold power level as a function of a minimum data rate that can be supported with the remote terminal.

27. (Currently Amended) Computer readable medium embodying a program of instructions executable by a computer program to perform communications, the instructions comprising:

listening for a period of time for an incoming pilot signal from a first remote terminal that exceeds a threshold power level for the purpose of acquiring such incoming pilot and operating under control of the first remote terminal;

determining ~~that~~ a condition of non-acquisition of such incoming pilot signal ~~has not been~~ acquired within the time period; and

operating independently of the first remote terminal after determining ~~that~~ the condition of non-acquisition of such incoming pilot signal ~~has not been acquired~~ within the time period, such independent operation including transmitting a pilot signal, whereby the transmission of a pilot signal enables communications with at least one other terminal.

28. (Previously Presented) The computer readable medium of claim 27 wherein the instructions further comprises registering with a plurality of second remote terminals that acquire the transmitted pilot signal

29. (Previously Presented) The computer readable medium of claim 28 wherein the instructions further comprises managing the number of terminal registrations by adjusting the power level of the pilot signal transmission.

30. (Previously Presented) The computer readable medium of claim 27 wherein the instructions further comprises setting the threshold power level as a function of a minimum data rate that can be supported with the first remote terminal.

31. (Currently Amended) A method of communications, comprising:  
listening for a period of time to acquire an incoming pilot signal from a first remote terminal;  
determining that such incoming pilot signal has been acquired within the time period;  
exchanging signaling messages with the first remote terminal once such incoming pilot signal has been acquired;  
enabling a pilot signal transmission for the purpose of operating independently of the first remote terminal; and  
registering a plurality of second remote terminals that acquire the transmitted pilot signal, the second remote terminals ~~being~~ previously registered with the first remote terminal prior to the exchange of signaling messages, whereby the transmission of a pilot signal enables communications with at least one other terminal.

32. (Currently Amended) A module, comprising:

a receiver configured to listen for a period of time to acquire an incoming pilot signal from a first remote terminal; and

a processor configured to acquire such incoming pilot signal if the receiver detects such incoming pilot signal within the time period, exchange signaling messages with the first remote terminal ~~once~~ upon acquisition of such incoming pilot signal ~~has been acquired~~, enable a pilot signal transmission for the purpose of operating independently of the first remote terminal, and register a plurality of second remote terminals that acquire the transmitted pilot signal, the second remote terminals being previously registered with the first remote terminal prior to the exchange of signaling messages, whereby the transmission of a pilot signal enables communications with at least one other terminal.

33. (New) The module of claim 1 wherein the transmission of a pilot signal enables communications with terminals not controlled by a master terminal.

34. (New) The method of claim 15 wherein the transmission of a pilot signal enables communications with terminals not controlled by a master terminal.

35. (New) The module of claim 23 wherein the transmission of a pilot signal enables communications with terminals not controlled by a master terminal.

36. (New) The computer readable medium of claim 27 wherein the transmission of a pilot signal enables communications with terminals not controlled by a master terminal.



37. (New) The method of claim 31 wherein the transmission of a pilot signal enables communications with terminals not controlled by a master terminal.

38. (New) The module of claim 32 wherein the transmission of a pilot signal enables communications with terminals not controlled by a master terminal.

**REMARKS**

Reconsideration and withdrawal of the rejections set forth in the Office Action dated November 22, 2006, is respectfully requested in view of this amendment. By this amendment, claims 1, 15, 23, 27, 31 and 32 have been amended, and new claims 33-38 have been added. Therefore, after entry of the above amendments, claims 1-38 will be pending in this application.

Claims 1, 15, 23, 27, 31 and 32 have been amended to describe the transmission of a pilot signal for the purpose when operating independently of the remote terminal as enabling communications with at least one other terminal. New claims 33-38 describe the transmission of a pilot signal for the purpose when operating independently of the remote terminal as enabling communications with terminals not controlled by a master terminal. It is respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. §132. These amendments are made without prejudice to later prosecution of the subject matter of these claims in this application or a subsequent continuation application.

In the Final Office Action, claims 1-30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Haartsen (US 6,026,297, hereinafter *Haartsen '297*), taken in view of Taib, et al. (US 2003/0177219, hereinafter *Taib*). Claims 31 and 32 were rejected under 35 U.S.C. §102(e) as anticipated by *Haartsen '297*. These rejections, as applied to amended claims, are respectfully traversed.

**Rejections under 35 USC §102**

Claims 31 and 32 were rejected under 35 USC 102(b) as anticipated by *Haartsen '297*. *Haartsen '297* was cited as showing a communications method in which a receiver listens for a message signal, represented in the Office Action as a pilot signal, receives the pilot signal of a remote unit, and determines if the incoming pilot signal has been acquired within a time period. *Haartsen '297* is further cited as showing exchanging signaling messages with a first remote terminal once such incoming pilot signal has been acquired, enabling pilot transmission for the purpose of operating independently of a remote terminal and registering a plurality of second remote terminals previously registered with a first terminal.

**Response**

The test for anticipation under section 102 is whether each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP §2131. The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990). This is particularly relevant to the prior art handling of pilot signals and enabling communications with at least one other terminal.

All of the elements of the present subject matter are not found in the cited prior art. Applicants submit that *Haartsen '297* fails to disclose each and every element of claims 31 and 32 as amended. Applicants' claim 31 describes:

"... determining that [an] incoming pilot signal has been acquired ... enabling a pilot signal transmission for the purpose of operating independently of [a] first remote terminal ... registering ... remote terminals that acquire the ... pilot signal, ... whereby the transmission of a pilot signal enables communications with at least one other terminal."

Similarly, claim 32 describes:

"... the receiver ... [exchanging] signaling messages with [a] first remote terminal upon acquisition of [an] incoming pilot signal, enable a pilot signal transmission for the purpose of operating independently of the first remote terminal, and register a plurality of second remote terminals that acquire the transmitted pilot signal, the second remote terminals being previously registered with the first remote terminal prior to the exchange of signaling messages, whereby the transmission of a pilot signal enables communications with at least one other terminal."

It is respectfully submitted that *Haartsen '297* fails to show or suggest the use of a pilot signal in any of the functions described in that reference. Instead, *Haartsen '297* describes messages including a "paging message" (column 3, line 8) and exchanging information (column 3, lines 60-61). Specifically, there is no description of receipt of a pilot signal of a remote unit as recited in claims 31 and 32.

Since the monitoring of pilot signals is not disclosed at all in *Haartsen '297*, there can be no determination if an incoming pilot signal has been acquired within a time period because there is no disclosure of the pilot signal. The exchange of signaling messages with a first remote terminal once such incoming pilot signal has been acquired is not suggested in *Haartsen '297*, again because there is no description of the pilot signal in the first place. The enabling pilot transmission for the purpose of operating independently of a remote terminal is also absent.

In view of the foregoing, Applicants submit that *Haartsen '297* fails to disclose all of the claimed features of claims 31 and 32, and thus does not anticipate those claims. Therefore, withdrawal of the rejection is respectfully requested.

### **Applicability of 35 USC §103 to Claims 31 and 32**

It is noted that the features described above in connection with the *Haartsen '297* reference specifically contradict the invention as claimed because the *Haartsen '297* reference relies on monitoring paging signals. The format of the paging message is not clear, but is in part described in *Haartsen '297*:

"techniques are described for enabling a master to page and thereby "awaken" an idle slave in a frequency hopping system by using the address and clock estimate of the recipient." Col. 1, lines 52-55.

*Haartsen '297* goes on to describe the "paging" procedure:

"the act of establishing the connection with the third wireless unit in the second wireless network includes transmitting a paging message that includes an address of the third wireless unit, receiving a response from the third wireless unit, and establishing the connection with the third wireless unit. In this way, the first wireless unit may be a master in the second wireless network." Col. 2, line 63 - col. 3, line 3 (emphasis added).

This suggests that the devices in *Haartsen '297* respond to a message with their address, or conceivably a message with any valid address. There is no suggestion that the receiving stations disregard this protocol and listen for pilots instead. Therefore it would be unobvious under 35 U.S.C. 103(a) to modify *Haartsen '297* to meet the claim limitations of the present invention.

**Rejections Under 35 U.S.C. §103**

The Examiner rejected claims 1-30 under 35 U.S.C. §103(a) as being unpatentable over *Haartsen '297* taken in view of *Taib*. This rejection, as applied to amended claims 1-30 and new claims 33-38 is respectfully traversed.

The *Haartsen '297* reference is cited as showing listening to an incoming signal and if the receiver detects an incoming pilot signal within a time period, the receiver operates under control of the corresponding remote terminal. Independent operation is cited as enabling pilot signal transmission. *Taib* is used to show the use of a threshold power level.

As pointed out above, *Haartsen '297* is directed to a paging system by which wireless receivers respond to a paging message that includes an address of a wireless unit. Therefore, there can be no suggestion in *Haartsen '297* that a pilot signal be monitored. In particular, there is no teaching or suggestion that a pilot signal be used as a criterium for whether a receiver operates under control of a remote terminal. Therefore the prior art is devoid of a suggestion that, if an incoming pilot is not received within a listening time period, the receiver operates independently and enables a pilot signal transmission.

The claims, as amended, further distinguish the present invention over the prior art of record:

"... such independent operation including enabling a pilot signal transmission, whereby the transmission of a pilot signal enables communications with at least one other terminal." (Claim 1; claims 15, 23 and 27 similar.)

There is no suggestion in the prior art of record that if the threshold is not reached, independent operation be enabled including enabling a pilot signal transmission. There is further no suggestion in the prior art of record that the pilot signal enable communications with at least one other terminal.

In contrast, *Haartsen '297* determines connectivity by use of paging messages that includes an address of remote wireless units. Therefore it would not be obvious to include a threshold power level (*Taub*) into a wireless network such as *Haartsen '297*, as such a combination would still not provide the features of the presently claimed subject matter.

This ability to enable communications with at least one other terminal is further elaborated upon by dependent claims 33-38, which describe the pilot signal enabling

communications with terminals not controlled by a master terminal. This process is neither shown nor suggested by the prior art of record.

Dependent claims 2-14, 16-22, 24-26 and 28-30 are allowable for the reasons given above, in combination with their features. Specifically, the prior art of record fails to show or suggest establishing a communications link with a second remote terminal that acquires the transmitted pilot signal (claims 2, 6, 19, 22, 24 and 28). The prior art of record fails to show or suggest registering each of a plurality of second remote terminals that acquire the transmitted pilot signal (claims 3-7, 17-21, 24, 25, 28 and 29). The prior art of record fails to show or suggest receiving a request to communicate from an unregistered terminal and assigning one of the registered terminals to communicate with the unregistered terminal (claims 8, 11-13 and 22). The prior art of record fails to show or suggest selecting threshold power level in association with a pilot, in which the threshold power level is a function of a minimum data rate (claims 9, 28 and 30).

The remaining dependent claims are allowable at least for the reasons given above with respect to their respective independent claims.

Therefore claims 1-30 and 33-38 are allowable over the prior art of record.

#### **OTHER REFERENCES OF RECORD**

Applicants has reviewed the references made of record and asserts that the claimed invention is patentable over the references made of record.

### CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner call the undersigned.

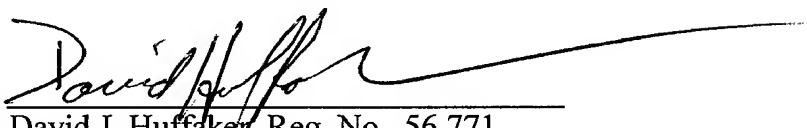
Applicants respectfully request a two-month extension of time to respond to this Office Action. The Commissioner is hereby authorized to charge the requisite fee of \$450 to Deposit Account No. 17-0026.

Please charge any other fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

Dated: April 12, 2007

By:

  
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